No.

AN

# ESSAY,

ON

# The Operation of Mercury,

IN

# The HUMAN BODY;

*In which, the Manner* HOW *Salivation is produced by that Medicine,*

IS ATTEMPTED TO BE EXPLAINED:

Interſperſed with Obſervations on the Treatment of

The VENEREAL DISEASE.

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# PREFACE.

*THE few following pages (publiſhed heretofore as the Author's inaugural diſſertation) owe not their appearance either to vanity or a deſire of gain.*

*Some few friends, judges of the ſubject, were pleaſed to expreſs their approbation of the work in it's original dreſs. Notwithſtanding the advantage of their ſuffrages, however, he would ſcarce have been induced to offer this tranſlation to the public, was he not prompted by the moſt powerful motive.*

*In medical books, and by lectures on medicine, a method, widely different from that now propoſed, is recommended, and generally followed by Phyſicians and Surgeons.*

*In offering his mite towards the alleviation of diſtreſs, however, the Author hopes he will not be thought preſumptuous, ſhould he venture to differ from received opinions, although ſanctioned by great names.*

*As, from the very nature of the ſubject, he is, in ſome ſort, obliged to take notice of the various theories which have been, and are delivered on the action of this fluid; he will endeavour to treat them with that candour which he would expect from others.*

*In doing this, he diſclaims the narrow views and prejudices of party; unhappily too much attended to, by many, in medicine; nor will enter further into the ſubject than neceſſity requires.*

*Exceptions may perhaps be taken to particular parts of the theory;—he only can ſay in it's vindication, that he has endeavoured, as much as time and opportunity would allow, to elucidate it. He pretends not to infallibility; nor will repine at having ſuch errors pointed out, as his own partiality may have made him overlook.*

*But ſhould the general plan of cure (which has been collected from repeated obſervation and experiment) be approved, and ſucceed with others as with himſelf; particularly in removing the venereal diſeaſe, to which his attention has been more immediately directed;—ſo that the treatment of it may become familiar and certain, even to thoſe not deeply verſed in medical knowledge; and happily by that means many unfortunates of both ſexes be ſaved from the mercileſs claws of illiterate Quacks; as well as from the ravages of a loathſome, but yet too common, diſtemper;—he will receive that kind of gratification which he wiſhes.*

*It is thought neceſſary to premiſe to the account of this mineral, that ſo many treatiſes have been written upon it's medical effects, as might induce ſome to ſuppoſe little was left for more modern enquiries.*

*Thoſe who are verſed in the practice of phyſic are ſenſible of the contrary; nor are they ignorant how few data we have to reaſon from, on the operation of medicines.*

# AN ESSAY, ON The Operation of Mercury, &c.

THIS ſubſtance, from it's ſingular properties, has occaſioned a difficulty among ſome chemiſts with reſpect to it's claſſification: it's volatility ſeeming to allot it a place among the ſemimetals; whilſt it's metallic brilliancy, reſembling melted lead, and it's malleability in certain degrees of cold, entitled it to a rank among the metals: whilſt, at the ſame time, the peculiar property of remaining generally fluid, ſeemed to claim that it ſhould be claſſed by itſelf.

Although this may poſſibly be of ſome weight in a chemical controverſy, it can be of no moment to the Phyſician in a medical point of view. It will be ſufficient for our purpoſe to point out it's oſtenſible qualities, in order to enable us to judge of it's degree of purity, which is a point of infinite moment, and, we have reaſon to think, too little attended to in general.

Mercury is an opake fluid of metallic brilliancy, when perfectly pure ; when adulterated with lead, or with lead and biſmuth combined, which laſt mixture is more complete, it has a duller hue, and is apt, when poured out upon a table, to run into threads or ſmall ſtreams ; not quickly collecting, as when pure, into globules.

For medical purpoſes it ſhould always be diſtilled ; the paſſing it through leather, a common mode of purification, not being ſufficient to free it from portions of lead, as combination with biſmuth renders this capable of paſſing through ſuch a ſtrainer.

It is found in the bowels of the earth, mixed for the moſt part with ſulphur in various proportions; with other oary matter, and ſometimes pure in a fluid ſtate: it is however not very abundant in nature. Different parts of Europe furniſh ſmall portions of it; as Spain, Hungary and Italy. It is found in South-America;—but the principal part of that we are ſupplied with, is brought from the Eaſt-Indies.

Mercury mixed with ſtony matter is eaſily ſeparable from it;—by grinding the ſtone, ſuffering the mercury to ſeparate, and laſtly, by repeated ablutions carrying off the earthy matter; whilſt the mercury remains from it's weight and inſolubility in the bottom of the veſſel,

It's ſeparation from ſulphur is a matter of more difficulty.—This may, indeed, be effected in ſmall quantities pretty readily, by ſublimation; but, as the method would be both too troubleſome and expenſive for procuring large quantities; particular works have been conſtructed on a more extenſive and cheaper plan, in different parts where this ſubſtance is found*.

Although this metallic fluid was known to the Ancients, it was ſuppoſed by them a poiſon, and only came into general uſe in medicine about the ſixteenth century; as a cure for the venereal diſeaſe, about that time brought from America, and which reſiſted every other applied remedy †.

It is perfectly inodorous, and without any ſenſible taſte, when in it's crude form and perfectly pure;—but divided by a gummy, or other

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[*] See Fourcroy—Leçons de Chemie.

[†] Mercury was in uſe, with a very few, as early as the thirteenth century, and applied in the cure of cutaneous affections; and even employed in ointment for the purpoſe of ſalivating, in order to remove theſe.

See Dr. Alſton's Lect. on M. Medica, by Dr. Hope.

other medium, it affects the tongue with a diſagreeable ſenſation.

It appears, as much as gold, to be a ſimple, not a compound body; for no experiments, hitherto made, have ſucceeded in reducing it into component principles, and in reproducing it from theſe principles.

A long continued quick and inteſtine motion between the particles of mercury, changes it by degrees into a dark powder; which may be again reduced to fluidity, by the application of heat.—By this agitation, therefore, it appears to have acquired ſomething, which fire deprives it of:—and this ſomething would ſeem to be pure air.

Mercury is of extenſive uſe in the arts, as well as medicine:—it is acted upon by a variety of ſubſtances, and in combination with ſome of theſe, totally changes it's appearance, and ſome of it's properties. It's affinity with ſome of

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the more active acids,—as the nitrous,—is ſtrong; whilſt it requires a long continued heat and expoſure, to combine it with air; as in the mercurius calcinatus.

As we do not mean, however, to give a full chemical account of mercury in this place,—we ſhall proceed to what relates more particularly to our ſubject;—attending, in the mean time, to thoſe preparations of it, which, as being in conſtant uſe, in the practice of medicine, relate more particularly to it.

The neceſſity of a frequent recurrence to the uſe of this fluid in practice; and, the frequent failure of it in the cure of venereal, and other, caſes; which appeared incurable without it; among other conſiderations, have claimed the attention of public ſocieties, in collecting, adjuſting, and determining, ſuch preparations, with the doſes of each, as appeared moſt ſafe and efficacious. Among ſuch, none ſeem preferable to the preparations ordered by the colleges of London and Edinburgh, in their diſpenſatories. A liſt of theſe it does not ſeem neceſſary to inſert here, both as they are to be found in the above publications, as well as for reaſons to be given hereafter.

Having delivered as much of the hiſtory of this fluid, as was thought neceſſary to be premiſed, to the account of it's action and effects on the human body, the chief end in view; we ſhall proceed to this part of our ſubject.

We need ſcarce wonder at the bad ſucceſs of the earlier Practitioners with mercury in the cure of diſeaſe;—they adminiſtered it empirically, and, therefore, often failed; ſuch failure, however, was not, always, attributed to the mode of employing the medicine, and to their treatment of the patient; but, to the unconquerable nature of the diſeaſe itſelf, in it's confirmed ſtages :—hence, thouſands were left to periſh, under that ſevere ſcourge, the venereal diſeaſe, without relief. It is greatly to be regretted, the more active acids,—as the nitrous,—is ſtrong; whilſt it requires a long continued heat and expoſure, to combine it with air; as in the mercurius calcinatus.

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The cauſe of this evil, with us, may, in a great meaſure, be attributed to diſputes concerning it's "modus operandi" on the human body:—one party contending that it acted by it's weight only*; ſome, by it's aſtringency;—and others, that it cured by it's action as an evacuant, &c.

The latter opinion ſeemed long to have the greateſt weight; particularly as it was broached at the time ſalivation was in conſtant uſe; and this diſcharge, procured by mercury, thought to be the only certain method of cure. This opinion has had a warm ſupport from a celebrated Profeſſor of the practice of phyſic, and whoſe works are at preſent in eſteem.—However, after ſtanding it's ground for a conſiderable time, it has been ſufficiently refuted by experience;

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* See Dr. Mead's Works.

perience; ſo, that leſs ſeems neceſſary to be ſaid on the ſubject, at preſent, than was intended.

A later opinion than any of theſe has been given to the world, in a treatiſe on the Venereal diſeaſe, by a very ingenious gentleman. In this book, the author tells us, that mercury cures the venereal diſeaſe by removing the morbid irritability of the ſolids, and not by any ſpecific power; and that, therefore, a particular regimen, with regard to diet, can have no effect, either in promoting it's operation, or preventing debility.

We confeſs ourſelves at a loſs to know what is meant by it's removing the irritability of the ſolids, unleſs he ſuppoſes this effect is produced by it's ſtimulating them;—and if ſo, or if it has no ſpecific power, why may we not give any other ſtimulant as well?

It is alſo ſaid by this author, that, if mercury acted as a ſpecific in the Lues, we ſhould have no more, or ought to have no more, to do, than to throw in at once a certain portion ſufficient to ſaturate the virus.—I am apprehenſive there has been a little too much precipitancy in this part of the ingenious gentleman's reaſoning:—becauſe, he ſhould firſt have taught us a way of aſcertaining the quantum of virus, before we could act in this manner; beſides, where can we find a ſubject that would bear that quantity of mercury at one doſe, or in one day, that is found neceſſary for the removal of his diſeaſe? A man may bear a pint, nay even a quart, of ſtrong brandy in the day;—perhaps taken at one time, the conſequence would be fatal. We hope what is contained in the following pages will tend to refute this hypotheſis.

From repeated facts it appears " that mercury acts as an antidote to the venereal virus." It's curing venereal ulcers by external application only, and removing the venereal diſeaſe when adminiſtered internally, and often, when applied externally, without producing any remarkable evacuation, when other medicines, acting as evacuants, produce no ſuch effects; are not among the weakeſt arguments againſt the former opinion of it's curing by evacuation; they ſtrongly ſavour it's antidotal power: beſides, in confirmed caſes, it is not to be ſuppoſed that a partial evacuation, ſuch as that by the mouth, could remove a diſeaſe which had tainted all the ſolids of the body, as well as the fluids.

Almoſt all the writers on this ſubject caution us to guard againſt the ſtimulant power of mercury, leſt it induce violent inflammation: and to theſe cautions, indeed, we may, in a great meaſure, impute the practice of many, who make their patients undergo long courſes of purging, warm bathing and low diet. Whether ſuch practice is built on ſolid principles, we ſhall endeavour to ſhew in the ſequel.

For the purpoſe of explaining our meaning more fully we ſhall, for the preſent, adopt the ſuppoſition, " That the encreaſed action of an " animal fibre, is followed by a relaxation or " debility of the ſame; and, that the longer it " is continued, ſo much greater will the relax- " ation or ſtate of debility become, after the " ceſſation of ſuch action"*. What we mean by *encreaſed*, and what moſt probably the Dr. means, is, an *exertion* beyond what is uſual or accuſtomed.

If, then, it can be proved, that mercury acts as a powerful ſtimulant, but unconquerable, and not to be aſſimilated by the powers of an animal body; it follows, that every part of ſuch body to which it is applied, will, in conſequence of the longer or ſhorter continuance of it's exertion upon it, become more or leſs weak, proportionably to the quantity uſed. Obſervation favours this opinion. The emaciated ſubjects who have undergone courſes of this fluid are our proofs.

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* Cullen's firſt lines.

This view of the matter opens a wide field, and points to an examination of the action of ſtimulants in general, with the *particular* operation of each; which is not our deſign to enter upon in the preſent treatiſe: we ſhall endeavour, however, without much digreſſion, to explain our ideas of the matter under conſideration.

Vegetable and animal ſtimulants do not *ſeem* in an animal body, when applied in quantity proportionable to the force of each, ſuch laſting, or permanently debilitating effects, as mineral ones. Here, if in any part more particularly of our work, we may perhaps be cavilled at: we know that henbane, hemlock, and ſome other vegetable productions may be adduced as producing more violent effects than moſt minerals.——Let us not, however, be haſtily condemned; let us examine the quantities in which theſe have been applied; let us attend to the conſequences of their application; let us *cooly* compare theſe with the effects of arſenic or lead in minute doſes; and then, but not before, judge, whether there may not be a foundation for what we have advanced.

What we have ſaid appears to be the caſe, though perhaps in a leſs degree than many others, with the different preparations of mercury; the principal diſtinction with regard to the operation of which, depends on their being rendered more or leſs acrid by combination.

Corroſive ſublimate, in the minuteſt doſes, as a quarter or half a grain, often creates ſickneſs, which has proceeded to vomiting and violent purging; whilſt many grains of calomel have been taken, by the ſame perſons, without producing uneaſineſs: this would ſeem to depend on the large portion of acid in the former, of itſelf indeed ſufficiently irritating, but doubly ſo, in the form of this ſaline compound; as not being ſo ſoon divided by the fluids it meets with in the ſtomach, &c.

Lead and it's preparations, introduced into the habit, ſo as not to be quickly mortal, from the quantity adminiſtered, produces violent colics, conſumptions, contractions of the joints, tremors, palſies, &c.

Arſenic, in minute doſes, will produce ſimilar effects, which are, perhaps, never got the better of.

Other minerals produce violent effects on the ſyſtem; and ſome become ſo cauſtic by combination, as to corrode and deſtroy the parts to which they are applied.

In it's crude ſtate, mercury is not obſerved to have, or produce, any remarkable effects on the body, and quantities of it have been found lodged in cavities (upon diſſection) which gave no uneaſineſs through life *. It, therefore, requires a ſeparation or diviſion of it's particles to produce obvious effects. When thus divided,

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* Mead, on poiſons.

ed, either by combination with acids, air, or gummy ſubſtances, it acts, with more or leſs violence, according to the preparation made uſe of, the quantity of ſuch preparation, and, perhaps, alſo according to the ſtate of the body at the time of uſing it. Certainly, the more debile the body is to which it is applied, the effects will be ſo much the more violent and quick.

*Moſt* of it's effects on the ſyſtem undoubtedly depend on it's ſtimulant power, and are to be explained from it; as, it's proving emetic, purgative, diuretic, diaphoretic, &c. and it's cauſing inflammation in ulcers, in a degree ſufficient for the formation of good pus, when externally applied.

The employment of it, either by the mouth or ſkin, ſo as to enter the lymphatics, removes obſtruction of the glands, by ſtimulating the veſſels into action; and will ſeldom fail in producing that effect, if the gland has not become impervious from the concretion of the veſſels, or too far diſtended by it's indurated contents, ſo that the fibres cannot recover their tone.

When mercury is either introduced into the habit by the mouth, or applied to the ſkin, in cutaneous affections, we can account for it's ſucceſs only on it's ſtimulant power.

It acts as an eſcharotic, ſome of it's preparations being ſucceſsfully uſed in deſtroying fungous fleſh, by the ſame power.

In ſhort, in what way ſoever we view the operations of this medicine, we muſt impute them *chiefly* to this power; remembering, however, that in the Venereal diſeaſe, it exerts an antidotal one in conjunction with that power: nor can any thing we have ſaid, in thus taking a view of the action of mercury, be conſtrued in any manner that may tend to the refutation of ſuch an opinion;—an opinion, as already obſerved, ſupported by facts. Proceed we now to examine, whether that debility already mentioned,

tioned, does or does not follow it's uſe. As we go on, we ſhall not loſe ſight of what we have already ſaid of it's antidotal power.

That languor, inability to perform wonted exerciſes, loſs of appetite, paleneſs of the countenance and flabbineſs of the ſkin, laxity, paleneſs and ſpongineſs of the gums; vertigo, profuſe ſweats on ſlight exertions, nauſea, a quick weak and ſmall pulſe, fever*, ſwelling of the legs, pains in the articulations, and other ſymptoms of extreme debility follow mercurial courſes; and theſe, in a greater or leſs degree, according to the quantity taken, and other circumſtances. cannot have eſcaped the notice of thoſe who are much converſant in practice. Nay, ſuch debility have we known follow mercurial courſes, as brought on dropſical and ſometimes pulmonic complaints, with a long train of evils.

From the property of mercury acting as a ſtrong ſtimulant, it might be expected, that inflammation,

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* See Plenk, Swidhauer, &c.

flammation, in a high degree, would often follow it's uſe in full habits; this, however, is prevented, by the uſual mode of exhibiting it in ſmall doſes, and a gradual manner: beſides, the tranſition from ſuch a ſtate to that of debility, is commonly ſo very rapid, that we can ſcarce obſerve this effect. That ſuch, however, may actually happen, in a certain degree, we can have no doubt, from the effects of ſtimulants in general, and from the nature of this as belonging to that claſs.

It has been obſerved that whilſt mercury operated on the ſyſtem, the blood drawn was covered with a buffy coat. Notwithſtanding this, however, we can by no means ſuppoſe that ſuch perſons were labouring under general inflammation; their pale, emaciated looks, and the degree of relaxation which ſoon follows it's uſe, ſufficiently warrants this opinion. At this time, too, the pulſe is quick and ſmall, encreaſing it's pulſations to 120 or 130 in a minute, ſometimes; which proves the vis vitæ to be conſiderably diminiſhed; for we find ſuch a pulſe in putrid fevers, the confluent ſmall-pox, &c.

From theſe effects, then, which are pretty uniform, and from the foregoing account, we hope it will be admitted, that mercury acts as a general ſtimulant, not to be overcome or aſſimilated *by* the powers of the ſyſtem, ſo as to form a part of it; and, therefore, inducing debility in it. By what is to come after, this will be further confirmed, and all together would lead us to conclude it injudicious, to uſe large evacuations, or indeed almoſt any, as preparatory to, and an abſtemious regimen *during* a courſe of this medicine: as from ſuch practice, longer time is taken to get rid of the firſt complaint, if it is cured at all, and frequently others, as before obſerved, induced by ſuch treatment.

From ſuch a view of the ſubject we ſhould proceed to that method of adminiſtering mercury which appears to us, in conſequence of our theory, to be moſt rational, and beſt calculated for removing diſeaſe; but are ſtopt by a queſtion which prevents itſelf in the inveſtigation of this matter. It is this;

Why does mercury produce, particularly, ſalivation, when applied as a remedy to human bodies, and ſpaſms and contractions in thoſe employed in preparing it in the arts, ſeparating it from cinnabar, &c.?

This has always appeared extraordinary to the writers on this ſubject; and, if we miſtake not, is to this day rather admired at, than accounted for. But, when we conſider, that ſalivation, and that to a great degree, appears in theſe perſons, as well as the contractions; (and indeed we ſhould ſuppoſe commonly precedes ſuch ſpaſmodic affections) our wonder will ceaſe; particularly, when we find ourſelves enabled to trace the production of ſalivation itſelf.

Theſe appearances, then, appear to us, evidently, to depend on the debilitating effects of this mineral fluid ;—for ſalivation is not produced, until ſome ſymptoms of weakneſs are induced, ſome quantity (generally ſpeaking) taken into the habit, or without it is adminiſtered to perſons of very irritable ones: in which laſt caſes, for in all the effect is the ſame, nearly, but varying in time and degree, except it paſſes off by the inteſtinal tube, it is produced very quickly. From all which, as well as other reaſons, we are led to ſuppoſe, that this diſcharge is cauſed by general debility.

The more we attend to this matter, the more we are confirmed in it.

Salivation is not readily induced in a perſon of vigour, whoſe organs of digeſtion are ſtrong; nor in a perſon of tolerable ſtrength, who lives at the ſame time on a diet of animal food, and uſes a good deal of exerciſe; until he is brought low by diſeaſe, medicine, confinement, or by an abſtemious courſe.

On the contrary, it is eaſily brought on in weak viſcera; in the ſcorbutic, and in thoſe of delicate habits; and, by the acrid preparations of mercury more readily than by the mild.

In the dyſpeptic there is, for the moſt part, a flow of ſaliva to the mouth, which is in greater or leſs degree, or quantity, according to the violence of the diſeaſe, and other circumſtances. In ſuch, we have known a ſalivation, without a particle of any medicine whatever, proceed to the quantity of many ounces in the day.

Sedentary perſons, the ſtudious, women who lead indolent lives, and many mechanics, who, from the nature of their occupations are obliged to ſit conſtantly, have rarely any great thirſt; owing to the quantity of ſaliva ſecreted; and we well know, ſuch perſons are very liable to, and often really are violently afflicted with, dyſpeptic complaints, and great laxity of fibre. In ſuch, mercury produces it's ſalivating effects, generally, quickly; and it is well known, when ſalivation proceeds to any conſiderable height, that gripes and diarrhoea, with, ſometimes, bloody ſtools, come on; whilſt the ſtomach becomes ſo greatly weakened, that the ſmalleſt portion of food creates the greateſt uneaſineſs. Nauſea and vomiting, are ſometimes obſerved at ſuch periods.

On the other hand, we cannot find the leaſt affinity between mercury and ſaliva: they will ſcarce by any means combine*, even in the minuteſt portions; nor do we ſee any colour of reaſon for ſuppoſing, (as we have heard ſome ſupport) that a particular union is formed with this fluid, when taken into the habit, more than any other in the body.

If mercury had any particular connexion with, or diſpoſition more particularly to effect the ſalivary glands, why ſhould the gums become ſoft, ſpongy and ſore, and the breath fœtid before ſalivation comes on? And why ſhould a generous diet, with moderate exerciſe and warm cloathing, prevent this effect; even when pretty large quantities of the medicine are adminiſtered? Beſides, it cannot be owing to any determination to the ſalivary glands, particularly, or from inflaming theſe glands; for when ſalivation is induced, the body *in every part* is debilitated; and theſe glands, though greatly enlarged and irritable, are not affected with inflammation, properly ſo ſtiled, but rather with that ſpecies, or bordering on that ſpecies, of affection which appears in the fauces in the putrid ſore throat. Other ſecretions, as well as the ſalivary one, are encreaſed in ſalivation; as urine, &c. We cannot refrain obſerving here, that many of our ſecretions are greatly encreaſed in low diſeaſes;—as urine, in diabetes and hyſteria; bile, in the yellow fever of the Eaſt and Weſt Indies, &c.

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* Plenk, by Saunders.

It ſeems, therefore, highly probable at leaſt, that we are to trace ſalivation from the debilitating effects of mercury on the ſyſtem; and this debility ſeems more evident in the ſtomach, than any where elſe:—and this may be well ſuppoſed muſt happen, both from it's ſtructure and office.

Why it produces ſpaſms and contractions, I think may be readily explained, from what has been already obſerved of it's ſtimulant power when applied in exceſſive quantity; as happens to thoſe employed in working mercury, and who are almoſt perpetually immerſed in it's vapour.

"Fabri aurarii a ſolius hydrargyri vapore,
"frequentes ſudores frigidos, lypothymias,
"convulſiones, laſſitudines, tremores, *ptyaliſmos*
"ſibi contrahunt."

Ephem. Germ. dec. 1. an. 1. obſ. 81.

"Rari admodum ſunt foſſores, & hujuſce
"materiæ artifices, tametſi robuſtiſſimi fuerint
"tempe-

"temperamenti, qui in eo opere, ad quartum
"uſque annum, incolumes perdurare valeant;
"quippe partium omnium tremore concuti-
"untur."

Matth. apud Alſton, pag. 80. V. 1.

Upon the foregoing principles we can explain the different phenomena attending the uſe of mercury; as, why it produces very moderate effects in ſome, whilſt in other conſtitutions, the moſt violent ſymptoms are quickly brought on by it. Why it produces ſalivation, gripes, or diarrhœas, in cold countries, ſo that patients are obliged to remove to warm ones for the cure of diſeaſe, in order, that theſe effects may be obviated; and why alſo, over-relaxing heat, by confinement in cloſe rooms, rolling the body in quantities of flannel, and at the ſame time an abſtemious regimen, hot baths, &c. produce the ſame effects as complained of in the other extreme. The cauſe of failure, alſo, in attempting the cure of diſeaſe by large quantities frequently repeated, (as thus the ſyſtem becomes overcharged,) and either ſalivation is induced, or violent diarrhœa brought on, may be *readily* accounted for: why the acrid preparations produce theſe effects in a more remarkable manner; and, alſo, why ulcers, in different parts of the body, have ariſen during it's continuance, attended even with caries and gangroene.

It may poſſibly be aſked here, If ſalivation follows mercury from it's debilitating effects on the body in general, and appearing more particularly in this diſcharge, and the weakneſs of the ſtomach, and other abdominal viſcera; why is not the ſame effect produced, when the body is debilitated by other cauſes?

We would anſwer this by another queſtion; Why is the appetite encreaſed in diabetes, whilſt the ſyſtem in general is weakened: or, why does the appetite often remain, while not only the body in general is debilitated, but even the abdominal viſcera diſeaſed; as in rickets?

But that we may not even ſeem to avoid this queſtion, although we might ſafely paſs it over until the above queries were anſwered; we obſerve, that particular diſeaſes, have their peculiar ſymptoms; by which, although joined with ſome ſymptoms of other morbid affections, they are in general diſtinguiſhed from such. Hyſteria, which according to Sydenham, and others, puts on various appearances, is known by the globe or ball aſcending to the fauces, and by the copious flow of limpid urine, &c. which frequently attends it. We often obſerve a flow of ſaliva to the mouth in this diſeaſe.

As we find ſome diſeaſes, where debility prevails, affect the abdominal viſcera more than others; ſo alſo do we find a diverſity in ſuch affections.

In Scurvy, ſome of the phenomena greatly reſemble what happens in ſalivation: to wit, lax, ſpongy gums and looſe teeth, fœtid breath, excoriation of the inner parts of the mouth, general weakneſs, particularly of the joints;

and, moſt commonly, a more than uſual flow of ſaliva to the mouth.

Eructations, flatulencies, anxieties, profuſe diſcharges of urine, obſtinate coſtiveneſs, and a thin and frequent ſpitting attend melancholia. See *Boerh. Aph.* 1109.

In Pyroſis, and frequently in Cardialgia, there is obſerved a copious ſpitting: moreover we obſerve, that diſagreeable things taken into the mouth, tranſmitted to the ſtomach, and rendering it uneaſy, although the mouth ſhall have been waſhed after ſwallowing them, occaſion frequent and copious ſputation. A doſe of corroſive ſublimate, in ſpirits or in water, has thus cauſed a ſpitting, which has continued for upwards of half an hour.

But what tends ſtrongly to confirm the idea of ſalivation being cauſed by debility, and which debility appears more remarkably in the viſcera of the abdomen, is, that this diſcharge is moſt effectually removed, and may be completely prevented, by whatever ſtrengthens theſe organs: whilſt debilitating powers applied either encreaſe the diſcharge, or bring on diarrhœa. We would alſo obſerve, that, ſo far as we know, ſalivation does not ariſe in any perſons, except their organs of digeſtion are weakened; or without irritating ſubſtances are applied to the ſalivary glands themſelves, or parts contiguous.

Before we proceed to the cautions to be obſerved in the adminiſtration of the medicine itſelf, and to the regulation of patients under courſes of this metallic fluid; we think it neceſſary to ſay a few words on it's preparations in general, and to give our reaſons for thinking, why ſome ſhould be preferred, and why others ſeem altogether unfit for the cure of diſeaſe.

As we ſuppoſe that mercury cannot remove the venereal diſeaſe, without coming into contact with every particle of the virus diſſeminated through the body, and acting upon it; and as it appears likely, that in other obſtinate complaints, alſo, it exerts it's influence the more effectually, the farther it is carried into the ſyſtem, ſo as to affect every the minuteſt part of it: therefore, it would ſeem, that ſuch preparation or combination, which may enter *every* the ſmalleſt capillary, and be taken *ſafely* for ſuch time as is neceſſary for removing the diſeaſe, without producing violent effects, muſt be the beſt.

From what has preceded, it will ſcarce be ſuppoſed we ſhall reckon among ſuch, either corroſive ſublimate, mercurius dulcis, mercurius calcinatus, or turbith mineral, with a long liſt of others of a ſimilar nature; from the adminiſtration of which (ſome more particularly than others) in ſmall doſes, follow profuſe diarrhœas, teneſmus, vomiting, and ſalivation.

Any medicine which creates a great degree of irritation in the firſt paſſages, is ill adapted for entering the mouths of ſuch delicate veſſels as the lacteals. Indeed we imagine that no highly irritating ſubſtance whatever, can enter them, until firſt well diluted, and ſheathed by the ſurrounding mucus. If this is truly the caſe, then, we clearly ſee one diſadvantage attending them, viz. that of not being taken into the maſs in ſuch quantity (in irritable habits particularly) as we may wiſh.

Theſe conſiderations muſt give a decided ſuperiority to the ſimpleſt preparations; ſuch as that of Plenk, with gum, or the mercurial pill of the Edin. pharmacopeia; which, indeed, have all the advantages of the former (if carefully prepared) without their diſadvantages. Not one of the acrid preparations can be given with ſuch certainty, as their operation is more precarious. All theſe produce very remarkable and quick effects in a few days, before it can be ſuppoſed that a ſufficient quantity is taken into the habit for the removal of diſeaſe; and evidently, before the removal of many ſymtoms of that diſeaſe. Beſides, with theſe very preparations, we are ordered to combine opiates, and to give them in the minuteſt doſes, in order to render them more mild in their operation. No ſuch combination is requiſite with crude mercury, divided by gums, honey, or mucilage; which may be continued, with proper management, for many weeks, nay for months, without inducing any violent ſymptom.

Hence then, it would ſeem, that all the arcanas and boaſted preparations of mercury, are inferior to the above ſimple combinations of it; but, as the efficacy of theſe laſt depend on the purity of the mercury itſelf, we ſhould be particularly careful in this reſpect; for which reaſon, attention to the directions heretofore mentioned is abſolutely neceſſary; to which we may add, that, if upon being rubbed with vinegar it imparts any ſweetneſs to it, it is unfit for uſe.

Combinations of mercury with antimony, heretofore much attended to, do not ſeem to encreaſe the efficacy of the former; and all combinations of it, with active ſubſtances, ſeem only to render it more or leſs acrid, without extending it's virtues *. All ſuch, then, may be properly comprehended under what was ſaid of acrid preparations in general. We ſhall only add to this account of the preparations for internal uſe, that the unguentum citrinum, mercurius dulcis, and mercurial ointment of the Edin. College, ſeem abundantly ſufficient for external purpoſes, in the variety of local, as well as general affections, for which mercury is applied. Extremely acid preparations are painful, as well as unneceſſary; nor do we think there is any purpoſe they are applied to effect, which theſe few will not ſucceed in, and with more eaſe.

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* That ſulphur mixed, in large portion, with this fluid renders it almoſt inert, is well known. It is a ſingular effect, and is to be conſidered only as an exception to the general rule laid down.

We have repeatedly known mercurius dulcis remove chancres in a few days, without uneaſineſs; by ſprinkling them frequently with it; and, believe it will ſcarce fail in ſuch caſes.

The ungentum citrinum, we are aſſured, is very powerful in removing many cutaneous affections, as well as venereal ſcurfs, by Dr. Monro; who, alſo informs us, that it produces excellent effects in old ulcers: and, from it's active ſtimulant properties, we may judge ſo.

In conſequence of that diſpute which has ariſen with reſpect to the nature of the two appearances following impure coition, namely gonorrœa and lues venerea, it has been doubted whether mercury was neceſſary in the former; as, by ſome, it is ſuppoſed that this matter is of a different nature from the lues, and may be cured by lenients, without the neceſſity of recurring to ſo Herculean a remedy; which, they think, may injure the conſtitution,

ſtitution, without producing counterbalancing advantages.

It is not our intention to enter into this diſpute; becauſe it is not eaſily brought to the teſt of experiment, and becauſe we hope the method recommended of adminiſtering mercury, with as much ſafety as any remedy whatever, may obviate the objections formed againſt it's uſe.

It ſerves our purpoſe, alſo, to have obſerved, with many others, that gonorrhœa *frequently* yields to mercury: and, we have repeatedly known recent, as well as infections of this nature of a long duration, quickly cured by the application of mercurial ointment to the penis, in the courſe of the uretha; giving, at the ſame time, plenty of mucilaginous diluents; with now and then an anodyne to abate irritation when exceſſive: in which courſe, bathing the parts with warm milk and water, greatly contributed to the alleviation of inflammatory ſymptoms.

Whether the cure would not have ſucceeded without the ointment, we will not pretend to ſay; but we well know, infections of years ſtanding, of this nature, have been ſpeedily removed by the preceding courſe.

It is obſerved in that treatiſe lately publiſhed, which we have had occaſion in the former part of this eſſay to mention, that gonorrhœa has been contracted, whilſt a patient has been under a courſe of mercury; and, this is thought to be a proof, that this medicine does not exert an antidotal power. We muſt, again, repeat that we cannot admit this as a proof; becauſe, the portion of mercury circulating with the maſs of fluids and coming into contact with that matter which produced gonorrhœa, at the time, or even after coition, might not have been ſufficient for it's ſaturation. We know for a *certainty* that venereal ulcers are effectually cured by mercurials; it *remains* to be proved, whether other applications will ſucceed as effectually.

Mercurial injections, or, indeed, any other, in gonorrhœa, ſeem not only unneceſſary, but improper during the virulence of the diſcharge; often encreaſing the inflammatory ſymptoms, and forcing a tainted mucus further into the urethra; whence, frequently, various ill conſequences ariſe; as, a ſwelling of the teſtes, ſuppreſſion of urine, and ſuch inflammation may be induced as will end in ſtricture; and, in reality, there is reaſon to imagine, that ſtrictures of the urethra ariſe from this cauſe more frequently than any other: for, although they ſometimes ſucceed in ſtopping the diſcharge, and that ſpeedily, yet where the riſque is great, and in very irritable habits every degree of inflammation is dangerous, we would gladly ſee them diſcarded. If the cure by ointment is not quite ſo ſoon effected, we believe it's certainty and ſafety is much greater.

When the inflammation has ſubſided, and the diſcharge has loſt it's virulence, proceeding from laxity only; perhaps gently aſtringent injections may be employed with advantage.

That mercury will not always remove lues when uſed ſo as to promote ſalivation, even by repetition in the ſame perſon, is abundantly proved from numberleſs examples; and as well known, at the ſame time, that of all the remedies we are acquainted with, this only is with certainty to be relied on for the cure of this malady: this, alone, ſufficiently proves that the idea of mercury curing it by evacuation is not well founded. Good effects, in confirmed caſes, are in general only found, when it is uſed in ſuch a manner as to pervade the whole habit, without producing any remarkable diſcharge. The repeated ſucceſs attendant on ſuch method warrants this aſſertion.

Some, indeed, do not heſitate to affirm, that the venereal is a diſeaſe of mere laxity or debility, and that ſtimulant remedies, by removing this, will cure it, without inducing the evils which have been complained of, as following the uſe of mercury; (great part of which evils, however, are oftener to be attributed to an impoveriſhing regimen, &c. than to the medicine itſelf) therefore, ſay they, nothing more is neceſſary than that the patient ſhould drink plentifully, and for a continuance, of wine or ſpirits, or ſuch like ſtimuli; or to take opium. To this *ſtrange hypotheſis* it may be only neceſſary to oppoſe facts; for it is well known that opium has *repeatedly* failed, under the moſt judicious management. (We might appeal to examples within our own knowledge.) And, if all ſtimulant medicines will cure this diſeaſe, why will not antimony, copper, or it's preparations, iron, zinc, tobacco, hemlock, euphorbium, or any other acid and ſtimulating ſubſtance animal, vegetable, or mineral, ſucceed, when applied to chancres, or given internally.

On the other hand, a very ingenious writer informs us, that mercury cures this diſeaſe by removing a morbid irritability of the ſolids, induced by the venereal virus; and, in which he ſuppoſes the diſeaſe to conſiſt. Now, we would appeal to every practitioner, who has had, even moderate, opportunities of ſeeing patients labouring under this diſeaſe, and undergoing mercurial courſes for it's cure; whether the ſolids do not become evidently more irritable after mercury has affected the ſyſtem, than they appeared before. In thoſe, who have not taken it for the cure of the lues, but for other affections, the ſame thing is obvious. We imagine it will ſcarce be doubted by this author, that there is a great degree of irritability prevails in ſcurvy; yet ſurely, mercury to remove this would be improper.

As before obſerved, we can readily perceive the reaſon why ulcers remain after large quantities of mercury have been taken ſo as to induce ſalivation, from the exceſſive debility induced both by medicine and regimen. The venereal diſeaſe, however, is often actually eradicated from the ſyſtem, whilſt ſuch ulcers remain in different parts of the body; and would frequently heal of themſelves, was the uſe of mercury laid aſide. Hence it appears, that whilſt the body is overloaded with this fluid, or in other words, that too great a quantity has been given, we may be deceived in the actual ſtate of our patient; being liable to ſuppoſe his ulcerated appearance ariſes from, or depends upon, the ſtubbornneſs of the venereal diſeaſe; whilſt the reverſe is truly the caſe.

It is no eaſy matter, perhaps, to form a certain judgment, without firſt diſcontinuing the medicine for ſome days, and obſerving the effects of ſuch procedure, whilſt the patient is allowed a full and generous diet: if the ulcers do not ſeem to mend by ſuch means, a further quantity of mercury may be neceſſary.

If, in the cure of diſeaſe, we adminiſter Plenck's preparation with gum, in the form of pills, theſe ſhould be made freſh every fourth or fifth day; as, on being kept, they are apt to become ſo hard, that poſſibly they might paſs the primæ viæ undiſſolved.

Mercurial friction, however, ſeems the moſt eligible method of introducing this fluid into the ſyſtem; but where it is either diſagreeable to the patient, or frets the ſkin too much, the pills may be recurred to; and either the former, or thoſe made according to the Edin. Diſpenſatory, with honey, may be adminiſtered.

Mercury has been, and is daily uſed for a variety of complaints, but it's frequent failure in the cure of many diſeaſes has, with juſtice, abridged it's uſe. It is unneceſſary, and perhaps might be deemed arrogant in me, to enter into a detail of thoſe which ſeem likely to be removed by it: this will readily occur from the foregoing account of it's operation; if that explication by future experience ſhall be found juſt.

We know it has been frequently recommended to give large quantities of mercury in the Paſſio Iliaca, or Volvulus;—not to mention the uncertainty, which every one knows muſt attend it's exhibition in this caſe; we are aſſured, by a celebrated profeſſor, that, upon the diſſection of a man, to whom labouring under this diſeaſe, this fluid had been copiouſly adminiſtered, he found the mercury every where divided into ſmall globules; part in the inteſtines, part in the ſtomach; ſo that the mechanical preſſure which it was expected would, from it's weight, have been exerted, was loſt: and, as we often learn more from one unſucceſsful, than from many fortunate caſes; may we not ſuppoſe that in thoſe which come under the latter denomination, where this method has been practiced, other circumſtances may have contributed to—perhaps effected—a cure?

It *ſometimes* happens, that in venereal patients, ulcers, from their appearance, are pretty *certain* marks of the diſeaſe not being cured, whilſt under courſes of mercury, when theſe laſt are ſo conducted as *not* to induce any violent ſymptom. In ſuch, fumigations with cinnabar, to heal them, are evidently improper; becauſe they deceive by drying up the ſores. But when ſuch ulcers ſhew a tendency to cicatrize, by appearing clean, and granulating about the edges, fumigations will quicken their healing.

It is propoſed in the adminiſtration of mercury, in whatever diſeaſe it is uſed; to pay ſtrict attention on it's firſt adminiſtration to full and muſcular habits; in order to avoid bringing on any inflammatory ſymptoms by this powerful ſtimulant; but, in oppoſite conſtitutions, and even in robuſt ones, after it's uſe for ſome time, we are carefully to guard againſt it's debilitating effects. This is to be done, by never ſuffering ſalivation to be brought on, if poſſible;—by leaving off the medicine when the gums come to be ſlightly affected; by a nouriſhing diet of ſoups, animal food, and jellies; with the moderate uſe of wine;—the bark, now and then, with exerciſe, either on foot, horſeback, or in a carriage, when the weather will permit. By ſuch means, it may be continued without injury, for almoſt any period, if taken in moderate quantity.

It is to be, always, given, combined with the mildeſt ſubſtances; as gum-arabic, or honey, (well triturated together) in order that it may give little or no irritation, but be readily taken into the circulation: ſhould it create the ſmalleſt degree of uneaſineſs, an opiate is either to be combined with it, or given at intervals.

Should ſalivation, from want of care and attention, appear, it is to be immediately ſuppreſſed, for obvious reaſons: for this purpoſe, we have not found any thing more effectual than laudanum frequently repeated. Purgatives, at this time, are liable to bring on violent diarrhœas; and, if this effect doth not follow their uſe, the ſpitting is encreaſed.

As great warmth debilitates the body, ſo moderate cloathing, and ſuch a temperature of the air as the patient feels comfortable, is to be preferred, as tending to ſtrengthen it. Wet linen, acids, a damp atmoſphere, exceſſive fatigue, with every thing that contributes to debilitate the body, are to be carefully ſhunned.

The ſame cautions are requiſite in the internal adminiſtration, as in the external application, of mercury.—In the latter, the patient ſhould apply it himſelf, if he has ſtrength, if not, a careful aſſiſtant, whoſe hand for this purpoſe is covered with a piece of bladder, is to be entruſted with the execution of it. Before friction, the parts ſhould be carefully ſhaved, and afterwards covered with calicoe or flannel.

When the ointment is deſigned to affect a particular gland, it is not to be applied directly on ſuch gland, but in the courſe of lymphatic circulation to it.

Little ſeems neceſſary to be ſaid of the method recommended, by ſome, of introducing mercury into the ſyſtem by the lymphatics of the mouth; as the diſagreeableneſs of it, as well as the uncertainty of the portion this way taken into the habit, with other cauſes, have prevented it's coming into general uſe.

As we know not into whoſe hands this Eſſay may fall, we ſeriouſly hope, that the ſanction granted to fuller living, whilſt under mercurial courſes, than has been formerly permitted, will not be taken by the unthinking and juvenile part of mankind in an improper ſenſe. We will venture to aſſert, that let what cautions ſoever be taken, the miſchiefs ariſing from repetitions of infection are deſtructive in their conſequences; and no one can be ignorant of the manifold miſchiefs attending *exceſs* in eating and drinking, particularly, whilſt labouring under diſeaſe.

We ſhall finiſh this ſubject by obſerving, that in conſtitutions which have ſuffered much from the uſe of this remedy, whether by it's bringing on affections of the lungs, great general debility, emaciation, a very irritable ſtate of the chylopoietic viſcera, or when ulcers remain from exceſſive laxity and weakneſs only: a milk diet, with country air, and moderate exerciſe in a carriage, or ſuch other manner as can be born with eaſe, is to be ſtrictly followed, until the ſtomach is found capable of bearing the bark, wine, and animal food.

Having hinted at the miſchiefs ariſing from the uſe of the warm bath during a mercurial courſe, it may be thought almoſt unneceſſary to mention the matter expreſsly; we ſhould be of the ſame mind, did we not know that this practice is ſanctioned by ſome of our moſt eminent practitioners; and from experience we can ſay it is a pernicious one.

FINIS.

Errata in ſome few of the Impreſſions.
Page 40. Line 14. *for* mercury *read* it.